



NAUTILUS GLH
USER GUIDE

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INTRODUCTION

Congratulations on your purchase of your new Indigo Industries NAUTILUS^{GLH} Diver Propulsion Vehicle (DPV). It is designed as a tool to assist you in improving your dives by increasing bottom time through lower exertion, assisting with photography and aiding in ascent/stop control. Properly Used, NAUTILUS^{GLH} will provide years of enjoyment. Please note: NAUTILUS^{GLH} is not designed to control your dive. Follow all safety rules of diving at all times while diving.

Do not dive without proper certification from a suitable training agency and instructor.

NAUTILUS MOTORS ARE WATER LUBRICATED. DO NOT RUN FOR EXTENDED PERIODS OF TIME UNLESS MOTOR IS SUBMERGED.

WARNINGS

Lithium Batteries

Lithium-ion batteries can explode, catch fire, and/or cause burns if disassembled, punctured, cut, crushed, short-circuited, incinerated, or exposed directly to water, fire, or high temperatures. To ensure optimal safety and performance:

- DO use only batteries labeled for use with your Indigo Industries product. Do not use this battery for any other device.
- DO NOT use counterfeit or inferior-quality batteries in Indigo Industries products (see above). Use only Indigo Industries brand batteries purchased from an authorized Indigo Industries Dealer.
- DO NOT place loose battery assemblies in a receptacle containing metal objects.
- DO NOT store batteries with hazardous or combustible material; store in a cool, dry, ventilated area.
- ALWAYS keep batteries away from children.
- NEVER attempt to recharge an Indigo Industries lithium battery module with any other recharger than the appropriate Indigo Industries charger purchased from an Authorized Dealer.
- In the unlikely event lithium batteries catch fire, DO NOT attempt to put the fire out with water—use a Class D fire extinguisher or other smothering agent.
- Follow applicable laws and regulations for transport, shipping, and disposal of batteries.

For details on recycling lithium, lithium-phosphate, and lithium-ion batteries, please contact a government recycling agency, your waste-disposal service, or visit reputable on-line recycling sources such as www.batteryrecycling.com.

Failure to follow these warnings and/or directions could result in damage to your Indigo Industries battery/batteries and or product.

Rotating Impeller(s)

NAUTILUS MOTORS ARE WATER LUBRICATED. DO NOT RUN FOR EXTENDED PERIODS OF TIME UNLESS MOTOR IS SUBMERGED.

Never stick any body part or object into the impeller(s). Do not wear loose flowing clothing that may come into contact with rotating impellers. Always wear a cap to prevent long hair from entering the motor.

Water Intrusion

Be sure to check all sealing areas prior to each and every dive. Battery cap O-rings should be checked on every dive for damage and replaced every year or with any signs of wear. If water enters any part of the unit, return to an authorized Indigo Industries dealer for inspection. Remove batteries immediately if wet and return them to an Authorized Indigo Industries dealer for review.

PARTS

Thruster/DPV Housing
Battery Assemblies
Caps
Battery Chargers
Trigger

GETTING STARTED

Charging the Battery

The NAUTILUS ^{GLH} utilizes two high-power density lithium battery modules.

Each module contains a Battery Management System (BMS) that continuously protects against over-temperature, over-charge, over-discharge, and over-current. Sensing any of these events will immediately shut down the system. The BMS also balances the battery cells on each charge for battery longevity. To ensure the most production from your modules, an initial charge of 6 hours is needed. Follow these procedures to charge your NAUTILUS batteries

- Using the cap tool (provided on some models), unscrew the battery caps by inserting the tool into caps at the rear of the unit through the provided hole and turning the cap counter clockwise. Because there is a large surface and two O-rings, there will be continuous tension on the cap.
- Carefully set the cap aside ensuring that the o-rings stay clear of debris and dirt.
- Disconnect the yellow XT60 power connector from the battery.
- Repeat on the second tube.
- Plug in the XT60 lead from the batteries into the charger provided. The charger can charge both batteries at the same time.
- While charging, the indicator light on the charger will remain constant red. Once charge is complete, the light on the charger will turn to green.

Replacing the Battery

To replace the batteries, repeat in reverse the removal steps.

- Begin to put the batteries into the tubes by inserting the end of the battery closest to the wires first. To avoid damaging, DO NOT DROP THE BATTERIES INTO THE TUBE
- Stop after about 1/3 of the battery is in the tube and plug the yellow connection from the battery into the yellow connector on the DPV.
- The battery nests into the center of the opposite cap. If module doesn't engage completely into the tube, pull it out ½ inch and reposition until the modules are centered. DO NOT USE FORCE. The module should fit easily into the tube and front cap.
- Inspect the O-rings on each of the rear cap for signs of wear. If wear exists, replace. To replace:
 - Using an O-ring removal tool hook the inner O-ring and slide it over the outer O-ring and off of the cap.
 - Remove the outer O-ring.
 - Ensure that there are no foreign objects in the O-ring grooves.
 - Carefully clean with a cotton swab
 - Apply Molykote 111 Grease to the new O-rings and carefully stretch them into their respective grooves beginning with the first (outer) groove. Next stretch the inner O-ring over the outer O-ring and into its groove.
 - Ensure that the O-rings are seated completely in the groove.
 - Install the cap and tighten with the cap tightening tool. Tighten until the tube and cap touch.
 - Tuck all wires out of the way of the cap and threads
 - Connect the cap tighten with the cap tightening tool until the tube and cap touch.

Tank Mounting

The NAUTILUS^{GLH} is designed to mount onto the back of the SCUBA tank. To do so, loop the strap into the buckle forming a loop. Slide the loop and NAUTILUS^{GLH} over the tank until the bottom of the NAUTILUS^{GLH} is about 1/2 inch from the bottom of the tank. Tighten the strap. NOTE: If the BCD cam strap inter-fears, leave the NAUTILUS^{GLH} loose in position. Tighten the BCD and then tighten NAUTILUS^{GLH}.

Trigger Warnings

- The trigger is ALWAYS to be used in the left hand. This keeps your right hand free to access your air source should the need arise.

Forward/Reverse

NAUTILUS^{GLH} features both forward and reverse control. The trigger is a rocker design. When the front (away from the connecting wire) is depressed, NAUTILUS^{GLH} will drive forward. When toggled toward the wire connection or back, it will reverse.

Sleep Mode

To ensure that maximum battery is available and to protect against accidentally pushing the trigger in travel, the NAUTILUS^{GLH} goes into a sleep mode when not toggled for three minutes.

TO TAKE OUT OF SLEEP MODE TOGGLE THE FOLLOWING SEQUENCE. THE SEQUENCE TIMER IS 3 SECONDS... NO NEED TO RUSH.

REVERSE
FORWARD
FORWARD

A tone will sound. If no tone sounds, wait **four seconds** and re-enter the code.

Failure Mode

- A safety feature designed into the device protects against the unlikely event that the motor stay in the on position. In this instance pushing the trigger the opposite direction will shut down the system.

MAINTENANCE

After Use

- Rinse with fresh water after every use.
- Disconnect batteries
- Wipe down the finish and free any small debris from the impeller.
CAUTION: Do not insert any object, including fingers, into the impeller housing unless both batteries have been unplugged. Verify this is complete by depressing the trigger while out of sleep mode. Only clear this when no power is connected.

Battery O-Rings

- Replace the battery O-rings at the back of NAUTILUS^{GLH} after every ten cap removals or if O-rings become damaged in any way. Follow instructions on page 6.
- Ensure that there is proper lubrication before every use.

Dealer Maintenance Schedule

- An annual inspection by an Authorized Indigo Industries Pro Shop is required. Failure to have an annual inspection will void the owners warranty.
- Annual replacement of front cap O-rings and electrical box O-rings is required. These components, as well as an annual inspection, are to be performed only by an Authorized Indigo Industries Pro Shop.

Troubleshooting

Batteries won't charge.

- Ensure the charger cord is plugged into both a power source and the charger itself
- Ensure the charger is properly connected to the battery connector.
- Review charger. Is the light coming on in green (indication of full charge).
- Review battery connector for damage. If found, return battery module and charger to an Authorized Indigo Industries dealer for inspection.

NAUTILUS^{GLH} won't turn on.

- Check to ensure the unit is not in sleep mode.
- Ensure the batteries are properly charged.
- Ensure batteries are properly installed and plugged into the unit by unplugging the connector and replugging it. This must be done on both batteries before a retry is performed.
- Return the unit to an Authorized Indigo Industries Pro Shop for review.

NAUTILUS^{GLH} is charged and awake but the motor wont go in one or either direction.

- Unplug BOTH batteries, wait 30 seconds, and plug them both back in.

Technical Specifications

SPECS	NAUTILUS ^{GLH}
DESIGN	Indigo proprietary design <i>patent pending</i>
MOTOR TYPE	Two Brushless PM Motors Running in Parallel
ENVIRONMENTAL	Operates at extreme pressure and depth –APPROVED FOR DEPTH 120 FT
BEARINGS	Non-corrosive
VOLTAGE RANGE	12.5 -21 Volts
MAX CURRENT	50 amps
MAX POWER	700 watts
SPEED RANGE	300-3800 RPM
FORWARD THRUST	25 #
NOMINAL VOLTAGE	18 volts
BATTERY PACK CAPACITY	36 AHR and 648 WHR
LITHIUM CELL TYPE	LiMnCo
CELL CONFIGURATION	5S8P
TYPICAL RUN TIME	50 minutes at full power to auto shut off
COLOR OPTIONS	Midnight Black

Warranty

Indigo Industries Inc. warrants Indigo Industries products to the original retail purchaser to be free of defects in material and workmanship for as long as the original purchaser owns the product. Failure to complete regular maintenance will void this warranty. All other conditions of the standard Indigo Industries Inc. product warranty apply.

Standard Indigo Industries Warranty

Indigo Industries warrants all Indigo product for the period of two years from date of purchase. This warranty does not apply to commercially used product.

Indigo Industries will repair or replace any warranted component or replacement part that is defective in materials or workmanship. Replacement or repair of Indigo Industries product is it's only obligation under this warranty.

Indigo Industries is not liable for loss of or expenses and/or that are incidental, consequential or indirect.

Warranty is fully void if product is purchased by the consumer from an outlet that is not an Authorized Indigo Industries dealer. This warranty does not cover or include product finish, improperly installed or applied products, improperly maintained products, or damage due to abuse or neglect.

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